Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims

1-82. (Canceled)

83. (Currently Amended) A method for an electronically controlled enzymatic reaction at an addressable location, comprising the steps of:

providing ~~a location comprising~~ an array of microlocations comprising a permeation layer coupled to ~~an electrode~~ a plurality of electrodes, wherein each microlocation comprises an electrode coupled to the permeation layer;

contacting a ~~target~~ biomolecule with ~~said location~~ the permeation layer at a microlocation;

placing ~~said location~~ the electrode of the microlocation at an opposite charge to ~~said target~~ the biomolecule, thereby concentrating ~~said target on said location~~ the biomolecule at the microlocation;

attaching ~~said target~~ the biomolecule to ~~said location~~ the permeation layer at the microlocation; and

reacting an enzyme with the biomolecule at the microlocation.

~~contacting an enzyme with said location; and~~

allowing said enzyme to react with said target on said location.

84. (Currently Amended) The method of claim 83, wherein said ~~target~~ biomolecule comprises nucleic acid.

85. (Previously Presented) The method of claim 83, wherein said enzyme comprises a restriction enzyme, a ligase, a proteinase, a glycosidase, a DNA polymerase, a RNA polymerase, or a phosphorylase.

86. (Previously Presented) The method of claim 83, wherein said enzyme comprises a DNA polymerase.

87. (Previously Presented) The method of claim 83, wherein said enzyme comprises an RNA polymerase.

88. (Previously Presented) The method of claim 83, wherein said enzymatic reaction comprises an enzymatic digestion of a nucleic acid.

89. (Previously Presented) The method of claim 83, wherein said enzymatic reaction comprises synthesis of a nucleic acid.

90. (Previously Presented) The method of claim 83, wherein said enzymatic reaction comprises synthesis of a polypeptide.

91. (Currently Amended) A method for electronically controlled amplification of nucleic acid, comprising the steps of:

(1) providing a location comprising a permeation layer coupled to an electrode;

(2) providing an oligonucleotide primer Y attached to ~~said location~~ said permeation layer;

(3) contacting a single stranded nucleic acid X with ~~said location~~ said primer Y, wherein said primer Y specifically hybridizes to said nucleic acid X;

(4) placing said location at an opposite charge to said nucleic acid X, thereby concentrating said nucleic acid X on said location and hybridizing said nucleic acid X to said primer Y;

(5) contacting a nucleic acid polymerase with said ~~location~~ nucleic acid X and said primer Y;

(6) placing said location at an opposite charge to said polymerase, thereby concentrating said polymerase on said location and allowing said polymerase to synthesize a nucleic acid Y from said primer Y on said location;

(7) placing said location at a negative potential for a sufficient time to remove said nucleic acid X from said location;

(8) contacting an oligonucleotide primer X with said ~~location~~ nucleic acid Y, wherein said primer X specifically hybridizes to said nucleic acid Y;

(9) placing said location at an opposite charge to said primer X, thereby concentrating said primer X on said location and hybridizing said primer X to said nucleic acid Y; and

(10) placing said location at an opposite charge to said polymerase, thereby concentrating said polymerase on said location and allowing said polymerase to synthesize a nucleic acid from said primer X on said location.

92-94. (Canceled)

95. (Currently Amended) The method ~~for electronically controlled enzymatic reaction of claim 83~~ of claim 83, further including the step of placing said location at an opposite charge to said enzyme, thereby concentrating said enzyme on said location.

96. (Canceled)

97. (Currently Amended) The method ~~for electronically controlled enzymatic of claim 83~~ of claim 83, further including the step, after the second contacting step, of placing said location at a similar charge to said ~~target~~ biomolecule.

98. (Currently Amended) The method ~~for electronically controlled enzymatic reaction of claim 97~~ of claim 97, wherein placing said location at a similar charge to said ~~target~~ biomolecule serves to remove at least some of said ~~target~~ biomolecule from said addressable location.

99. (Currently Amended) The method ~~for electronically controlled enzymatic reaction of claim 83~~ of claim 84, wherein the addressable location includes a first sequence that is complementary to a first portion of the ~~target~~ biomolecule, further comprising the steps of:

contacting a second sequence, the second sequence being complementary to a second portion of the ~~target~~ biomolecule, with the ~~target~~ biomolecule at said location, the second sequence being capable of being ligated with the first sequence,

enzymatically ligating the first sequence with the second sequence, and

placing said location at similar charge to said ~~target~~ biomolecule to remove said ~~target~~ biomolecule from the ligated first sequence and second sequence.

100. (Currently Amended) The method ~~for electronically controlled enzymatic reaction of claim 99~~ of claim 99, wherein the steps are repeated for amplification.

101. (Currently Amended) The method ~~for electronically controlled enzymatic reaction~~ of claim 100 wherein the amplification is of the ~~target~~ biomolecule.

102-103. (Canceled)

104. (Currently Amended) The method ~~for electronically controlled enzymatic reaction of claim 99~~ of claim 99, further including the step of placing said location at an opposite charge to said enzyme, thereby concentrating said enzyme on said location.

105. (Currently Amended) The method ~~for electronically controlled enzymatic reaction of claim 104~~ of claim 104, wherein the steps are repeated for amplification of the ~~target~~ biomolecule.

106. (Canceled)

107. (Currently Amended) The method ~~for electronically controlled enzymatic reaction of claim 99~~ of claim 99, wherein the second sequence is labeled.